CLAIMS

Amend the claims as follows.

1. (Currently Amended) A document feeder mechanism, comprising:

one or more drive rollers;

one or more belts capable of tightening around the drive rollers, wherein at least one of the drive rollers is capable of driving the one or more belts;

~~an~~ a single idle roller; and

an elastic member attached at one end to the idle roller and attached at the other end to a body structure retaining the sheet feed mechanism, the elastic member configured to exert a force ~~on the one or more belts via~~ that presses the idle roller against the one or more belts, wherein the drive rollers, idle roller and one or more belts are further configured to:

move a document from a feed-in path to a feed-out path, wherein a direction of the feed-in path and a direction of the feed-out path are both substantially parallel to each other and also parallel to a direction of the force exerted by the elastic member on the idle roller; and

receive the document from the feed-in path, ~~transport~~ feed the document in-between the one or more belts and only the single idle roller so that the document wraps substantially 180 degrees around only the single ~~same~~ idle roller, and output the document from the ~~same~~ one single idle roller directly to the feed-out path.

2. (Currently Amended) The document feeder mechanism of claim 1, wherein: ~~the idle roller is configured to press against the one or more belts so that the document bends around the idle roller in a direction away from the one or more belts.~~ a first upper one of the drive rollers is spaced above the idle roller and a second lower one of the drive rollers is spaced below the idle roller and directly underneath the first upper one of the drive rollers,

a first upper portion of the one or more belts is suspended by the first upper one of the drive rollers vertically up against a back end of the idle roller and vertically above a top end of the idle roller, and

a second lower portion of the one or more belts is suspended by the second lower one of the drive rollers vertically up against the back end of the idle roller and vertically below a bottom end of the idle roller.

3. (Currently Amended) The document feeder mechanism of claim ~~1, wherein only one side of the idle roller presses against the one or more belts~~ 2 wherein:

a center rotation axis of the first upper one of the drive rollers and a center rotation axis of the second lower one of the drive rollers are both located behind a front end of the idle roller, the front end of the idle roller configured to receive the document from the feed-in path and output the document to the feed-out path, and

the center rotation axis of the first upper one of the drive rollers and the center rotation axis of the second lower one of the drive rollers are located behind a center rotation axis of the idle roller.

4. (Cancelled)

5. (Previously Presented) The document feeder mechanism of claim 1, wherein:

a first one of the drive rollers is located above the idle roller;

a second one of the drive rollers is located below the idle roller; and

a third one of the drive rollers is co-linearly aligned with the direction of the force exerted on the idle roller.

6. (Previously Presented) The document feeder mechanism of claim 5, wherein the feed-in path is substantially horizontally aligned between the first one of the drive rollers and the idle roller and the feed-out path is substantially horizontally aligned between the second one of the drive rollers and the idle roller.

7. (Cancelled)

8. (Currently Amended) The document feeder mechanism of claim 6, wherein the third one of the drive rollers is the same distance from both the first and second drive rollers, and

the first and second drive rollers are a greater distance apart from each other than their distance from the third one of the drive rollers.

9. (Currently Amended) The document feeder mechanism of claim 1, wherein the one or more drive rollers include one or more axles fixed to the body structure.

10. (Currently Amended) The document feeder mechanism of elaim 1, wherein the ~~multiple~~ drive rollers comprise only three drive rollers arranged in a triangular formation.

11. (Currently Amended) The document feeder mechanism of claim 1, wherein the elastic member is a spring fixed at one end to ~~the~~ a shaft of the idle roller and fixed at a second end to the body, the spring configured to push out from the body against the idle roller.

12. (Previously Presented) The document feeder mechanism of claim 1, wherein the document comprises a sheet of paper.

13. (Previously Presented) The document feeder mechanism of claim 1, wherein a contact between the one or more belts and the idle roller comprises a face type contact, a location of the face type contact between the idle roller and the one or more belts being substantially perpendicular to the direction of the feed-in path and perpendicular to the direction of the feed-out path.

14. (Previously Presented) The document feeder mechanism of claim 13, wherein a surface contact friction between the one or more belts and the document is greater than the friction between the idle roller and the document.

15. (Previously Presented) The document feeder of claim 1 further comprising:

a feed-in tray;

a feed-out tray located directly underneath the feed-in tray;

a feed-in roller configured to feed the document from the feed-in tray in the direction of the feed-in path, wherein the feed-in roller is disposed adjacent a first end of one side of the transmission mechanism; and

a feed-out roller configured to feed out the document from the idle roller and the one or more belts in the direction of the feed-out path toward the feed-out tray, wherein the feed-out roller is disposed adjacent a second end of the one side of the transmission mechanism.

16. (Currently Amended) The document feeder mechanism of claim 1, wherein the elastic member is configured to move the idle roller towards a substantially single tangential contact location on the one or more belts that is substantially perpendicular to the direction of force exerted by the elastic member against the idle roller, substantially perpendicular to the direction of the feed-in path, and substantially perpendicular to the direction of the feed-out path.

17. (Currently Amended) A sheet feeder system for a scanner having a body, comprising:

a feed-in roller located inside the body;

a feed-out roller located inside the body; and

a transmission mechanism located inside the body having an upstream end located adjacent to the feed-in roller and a downstream end located adjacent to the feed-out roller, the transmission mechanism comprising:

drive rollers;

one or more belts capable of tightening around the drive rollers, wherein at least one of the drive rollers drive the one or more belts;

an idle roller; and

an elastic member attached at one end to the idle roller and at the other end to the body, the elastic member configured to exert a force via the idle roller on the one or more belts,

and wherein: ~~substantially only one side of the idle roller contacts the belt and exerts the force from the elastic member against the one or more belts, the force exerted from the idle roller on the one or more belts being at least approximately in a document feed-in path direction and at least approximately opposite to a document feed-out path direction~~ belts

a first upper one of the drive rollers is spaced above the idle roller and a second lower one of the drive rollers is spaced below the idle roller,

a first upper portion of the one or more belts is vertically suspended up against a back end of the idle roller and vertically suspended above a top end of the idle roller by the first upper one of the drive rollers, and

a second lower portion of the one or more belts is vertically suspended up against the back end of the idle roller and vertically suspended below a bottom end of the idle roller by the second lower one of the drive rollers.

18. (Currently Amended) The sheet feeder system of claim 17, wherein ~~the number of drive rollers is three and the driver rollers are arranged in a triangular formation~~ a center rotation axis of the first upper one of the drive rollers and a center rotation axis of the second lower one of the drive rollers are both located behind a front end of the idle roller that faces the feed-in roller and feed-out roller, the center rotation axis of the first upper one of the drive rollers and the center rotation axis of the second lower one of the drive rollers also located behind a center rotation axis of the idle roller.

19. (Currently Amended) The sheet feeder system of claim 17, wherein movement of the one or more belts in combination with the force exerted by the idle roller on the one or more belts is configured to ~~move paper approximately 180 degrees around the same~~ wrap paper approximately 180 degrees around only the one single idle roller.

20. (Previously Presented) The sheet feeder system of claim 17, wherein:

a first one of the drive rollers is located above the idle roller;

a second one of the drive rollers is located below the idle roller; and

a third one of the drive rollers is co-linearly aligned with the direction of force exerted by the elastic member via the idle roller against the one or more belts.

21. (Previously Presented) The transmission mechanism of claim 17 further comprising a scan module located in between the transmission mechanism and the feed-out roller

and configured to scan paper output from the transmission mechanism after being moved 180 degrees around the idle roller.

22-28. (Cancelled)

29. (Currently Amended) A method for feeding a document, comprising:

driving a belt to transport a document;

asserting an elastic force against an idle roller causing the idle roller to press against the belt at a substantially tangential contact location on ~~the belt~~ a back end of the idle roller, the tangential contact location being ~~that is~~ substantially perpendicular to the elastic force asserted against the idle roller;

receiving the document from a feed-in path and feeding the document from the feed-in path in between a first side of the idle roller and the belt; ~~and~~

asserting the elastic force against the belt via the back end of the idle roller so that ~~a~~ the document ~~transported by the belt partially bends around the idle roller while the document at the same time partially separates away from the belt~~ wraps over the first side of the idle roller, around the back end of the idle roller, and over a second side of the same idle roller opposite to the first side; and

feeding the document out from the second side of the same idle roller to a feed-out path that is parallel and in an opposite direction with respect to the feed-in path.

30. (Currently Amended) The method according to claim 29 further comprising driving the belt with only three drive rollers wherein a first drive roller is located above ~~an in-feed~~ the feed-in path for the document, a second drive roller is located below ~~an out-feed~~ feed-out path for the document directly below the first drive roller, and a third drive roller is located in back of the first and second drive rollers in a co-linear alignment with a direction of force exerted on the idle roller.

31. (Currently Amended) The method according to claim 30 further comprising;

locating ~~an in-feed~~ a feed-in tray and ~~an out-feed~~ a feed-out tray externally from a housing that contains the belt, idle roller, and three drive rollers;

moving the document from the externally located ~~in-feed~~ feed-in tray into the housing and toward the belt;

using the belt, drive rollers, and the idle roller to maneuver the document through a substantially 180 degree turn around only one idle roller as the document passes through the housing; and

outputting the document from the housing to the ~~out-feed~~ feed-out tray.

32. (Currently Amended) The method according to claim ~~29~~ 30 wherein ~~a document feed-in path direction is substantially opposite to a document feed-out path direction~~ rotation axes of the first and second drive rollers are located behind a front end and behind a rotation axis of the same idle roller.